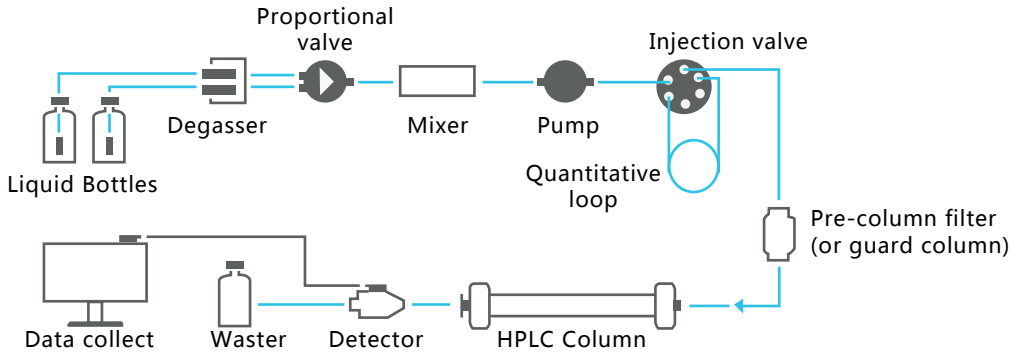
Ultisil™ Bio-UHPLC Column

Why biocompatible column ?

HPLC column hardware material in most cases is stainless steel, which has strong affinity for bio-materials, including protein, peptides. This affinity leads to undesired adsorption that results in bad peak shape, low sensitivity, and inaccurate analysis.

What material is biocompatible?

PEEK polymer and inert metals, such as titanium alloy, are known to be biocompatible.



The materials of all the parts which contact to liquid and samples should be biocompatible!

Welch Materials is proud to introduce the new PEEK-lined Stainless Steel UHPLC Column for biocompatible applications. This column combines the strength of stainless steel UHPLC column with the chemical inertness of PEEK polymer to ensure bio-sample integrity by minimizing undesired surface interactions while still allowing operations under harsh solvent or pH conditions.

Exterior structure and interior structure(b,c) of Welch Ultisil™ Bio-UHPLC(a)

Ultisil™ Bio-UHPLC Application Scope

- Bio-separation
- Ion analysis
- Low pH
- Strong solvent

Ultisil™ Bio-UHPLC Column

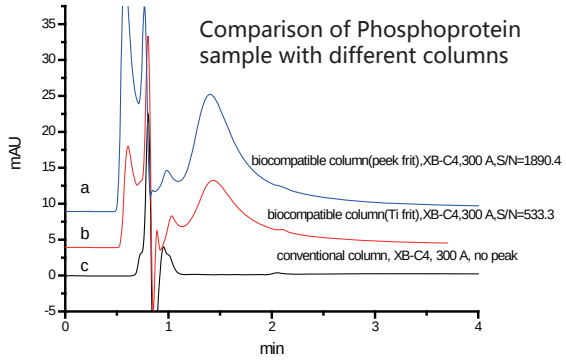
Features

- PEEK-Lined Stainless Steel Column Hardware
- Packing Pressure Rating: 20,000 psi
- Operation Pressure Rating: 15000psi
- Maximum Temperature: 80℃

Bonding Phases	Pore Size	Surface Area	pH Range	Endcapped
Ultisil™ Bio-UHPLC C4	300Å	100 m^2/g	2.0-9.0	Yes
Ultisil™ Bio-UHPLC C18	300Å	100 m^2/g	2.0-9.0	Yes
Ultisil™ Bio-UHPLC SEC*	300Å	100 m^2/g	2.0-9.0	No

SEC(Size Exclusion Chromatography) packing materials is the high purity, stable silica particles bonding hydrophilic polymers.

Dimension(mm)	Particle Size(μm)	Ultisil™ Bio-UHPLC C4	Ultisil™ Bio-UHPLC C18	Ultisil™ Bio-UHPLC SEC
4.6×100	1.8	00216-13639	00201-13639	00237-13639
2.1×100	1.8	00216-13612	00201-13612	00237-13612
2.1×50	1.8	00216-13610	00201-13610	00237-13610



Chromatographic conditions:
Flow Rate: 0.2 mL/min
Detection wavelength: 220 nm
Column temperature: 30℃
Injection volume: 4.0 μL
Mobile phase:water/acetonitrile/TFA=90/10/0.1
Solution preparation: dissolve accurately weighed quantities of Phosphoproteins in mobile phase to obtain a solution having concentrations of about 5mg of each per mL.

Fig. 1. The chromatogram of Phosphoproteins determined by three kinds of XB-C4 column (2.1×50 mm, 1.8 μm, 300 Å)
a. biocompatible column(peek frit); b. biocompatible column(Ti frit); c. conventional column
The concentration of Phosphoproteins was 5mg/mL.

According the results shown in Fig. 1c, it can easily be seen that Phosphoproteins failed to elute when using conventional stainless steel columns. Fig 1a and 1b showed that under the same concentration condition, the general trend is that the signal to noise ratio (S/N) obtained with biocompatible column using peek frit is higher than the biocompatible column using Ti frit.

BGB GC|LC MS|CE www.bgb-shop.com

Switzerland: BGB Analytik AG • Rohrmattstrasse 4 • 4461 Böckten • Phone +41 61 991 00 46 • Fax +41 61 991 00 25 • sales@bgb-analytik.com
BGB Analytik SA • Route de Pré-Bois 20 • 1215 Genève 15 • Phone +41 22 788 49 43 • Fax +41 22 788 49 45 • sales.fr@bgb-analytik.com
Benelux: BGB Analytik Benelux B.V. • Drielandendreef 42-44 • 3845 CA Harderwijk • Phone +31 341 700270 • Fax +31 341 700271 • sales.benelux@bgb-analytik.com
France: BGB Analytik France S.A.S. • 81 Vie de l'Etraz • 01630 St. Jean de Gonville • Phone +33 450 488567 • Fax +33 450 562378 • sales.fr@bgb-analytik.com
Germany: BGB Analytik Vertrieb GmbH • Mühlestraße 1 • 79539 Lörrach • Phone +49 7623 7173110 • Fax +49 7623 7173199 • sales.de@bgb-analytik.com